

UNION OF SOVIET SOCIALIST
REPUBLICS*[Coat of Arms]*(19) **SU** (11) **1,588,404 A1**STATE COMMITTEE OF THE U S S R
FOR INVENTIONS AND DISCOVERIES5 (51) A 61 B 17/58**SPECIFICATION OF INVENTION
TO INVENTORS' CERTIFICATE**

(21) 4446979/28-14

(22) 12.06.88

(46) 30.08.90. Bull. No. 32

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(53) 613.47: 616.71-001.5-089.84(088.8)

(56) USSR Inventors' Certificate No. 1,186,204 Int.Cl. A 61 B 17/58, 1984

(54) DEVICE FOR FUNCTIONAL RELIEF OF HIP JOINT IN COTYLOID CAVITY
FRACTURE CASES

(57) The invention relates to medicine and is aimed at functional relief of the hip joint load in cotyloid cavity fracture cases by providing support on the wing of the ilium. The device comprises a framework having mounted thereon turnbuckles 7 with bone fixators 1 at their ends, and an intra-bone rod 2 attached to the framework via a pivot assembly. The framework comprises a slat 3 with a pivotally mounted guide 4 with an opening 5 shaped as an arc and a stop 6. The turnbuckles 7 are pivotally joined to the slat 3 and the bone fixators 1. By adjusting the length of the turnbuckles 7 and also by using the pivotal joints with the fixators 1, the slat 4 and the rod 2, the required mobility in the joint is provided for. 3 drawings.

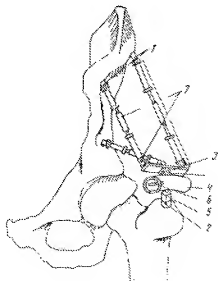


Fig. 1

The invention relates to medicine, and more specifically it relates to traumatology. It is an object of the invention to reduce traumatic effects by providing support by the wing of the ilium.

Fig. 1 of the appended drawings shows schematically the disclosed development in its operational state; Fig. 2 shows the intra-bone rod; and Fig. 3 shows the bracket.

The device comprises a framework having mounted on it brackets with bone fixators 1 on their ends, e.g. threaded ones, and a pivotally attached intra-bone rod 2. The framework is composed of a slat 3 with a pivotally mounted guide 4 with an arc-shaped opening/slot 5 and a stop 6, e.g. a pin. Each bracket includes a turnbuckle 7 pivotally joined to the slat 3 and to the bone fixator 1. The pivoted joint includes a spherical head 8 on the end of the intra-bone rod 2, received in the slot of the guide 4.

The device is applied and assembled as follows.

With the patient under general anesthesia, lying on his/her side, an access to the hip joint is achieved after the appropriate skin preparation. The fragments of the cotyloid cavity are reduced and fixed with either screws or a thin bar. Then the bone fixators 1 on the turnbuckles 7 are introduced into lateral surface of the wing of the ilium. The points of introduction can be, e.g. in the following locations: the first one, spaced by 2 cm from the top edge of the wing of the ilium, downward and rearward of the front top spine; the second one, by 5 - 6 cm rearward of the first one; the third one, into the body of the ilium. Then a hole is drilled in the proximal end of the greater trochanter to the marrow duct, and the intra-bone rod is set into it.

Now the framework is set, with the pivotal joint of the turnbuckle 7 with the fixator 1 not yet fixed. The spherical head 8 of the rod 2 is set into the opening/slot 5 of the guide 4. The size and shape of the arc of the opening/slot 5 are pre-selected in strict correspondence with the length of the greater trochanter to provide for maximum mobility in the hip joint in the flexing of the limb. By varying the lengths of the turnbuckles 7 accounting for their pivotal connections with the slat 3 and fixators 1, the slat 3 is joined with the guide 4 so that the latter should extend strictly in the direction of flexing of the hip joint, i.e. so that the spherical head 8 of the rod 2 should move freely in the opening/slot 5, and the slat 3 thus becomes properly pivotally joined to the guide 4.

The connections of the turnbuckles 7 with the fixators 1 are now fixed tight. Then, to preclude mutual impacts of the hip joint surfaces, the turnbuckles 7 are operated to extend the interspace of the hip joint by 0.3 - 0.5 cm. The slat 3 is indexed strictly parallel with the axis of flexing movement of the hip joint, and the connections of the turnbuckles 7 with the slat 3 are fixed tight. The drain arrangement is brought to the joint, and the wound is sutured layer-wise.

Subject of Invention

A device for functional relief of the hip joint in cotyloid cavity fracture cases, comprising a framework having mounted on it brackets with bone fixators on their ends and a pivotally joined intra-bone rod, characterized in that, in order to reduce traumatic effect by way of providing support by the wing of the ilium, the framework includes a slat having pivotally mounted on it a guide with an arcuate opening, each bracket including a turnbuckle pivotally joined to the slat and to the bone fixators, and the pivotal mounting includes a spherical head on the end of the intra-bone rod received in the opening of the guide.

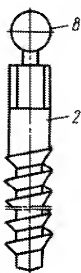


Fig. 2

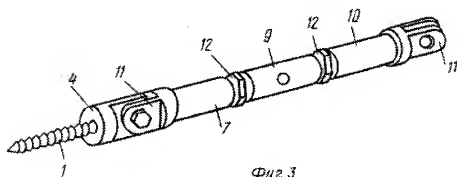


Fig. 3.

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